

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

NA S&PF  
St. Paul Field Office

*St. Paul Reports*

REPLY TO: 5220 Detection

S-3-77

November 4, 1977

SUBJECT: Forest tent caterpillar and drought surveys

TO: Forest Supervisor  
Superior National Forest



Insect and disease detection aerial surveys were made on June 21 and 22, 1977 on the Superior National Forest and nearby State and private land by personnel from Forest Insect and Disease Management and the National Forest. The purpose of the aerial surveys was to detect and delineate drought and forest tent caterpillar damage.

The surveys were flown at about 1,300 feet above the forest canopy at air speeds of 120-130 mph. Both surveys were flown in a Cessna 180. The flight lines were in an east-west direction, 12 miles apart. The entire National Forest was surveyed for visible defoliation and mortality, damage was sketched on a Forest map with a scale of 0.25 inches per mile.

The following codes were used to designate defoliation:

L - M Light to Moderate, 20-50% foliage loss.

M - H Moderate to Heavy, over 50% foliage loss.

Areas of less than 20% defoliation could not be seen from the air.

The main infestation area was between Virginia and Ely, MN, where over one million acres were defoliated (Table 1, Figure 1). All except 150,000 acres were in the L - M defoliation category. Forty-six areas were ground checked for verification of defoliation estimates and forest tent caterpillar presence.

Table 1. Acres defoliated by the forest tent caterpillar in Northeastern, MN.

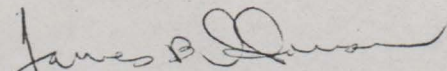
Defoliation Class	National Forest	State & Private	Total
L - M	433,750	427,250	861,000
M - H	50,000	100,000	150,000
Total	483,750	527,250	1,011,000



2.

Superior National Forest has an area of drought damage northwest of Ely where over 100,000 acres are moderately to heavily affected (Fig. 2). There are many smaller scattered pockets in other parts of the Forest. Species that showed drought damage include: red pine, jack pine, oak and maple. Jack pine on rock outcrop areas was the most severely damaged species. The maple and oak were showing signs of marginal necrosis. Fortytwo areas were ground checked for drought damage.

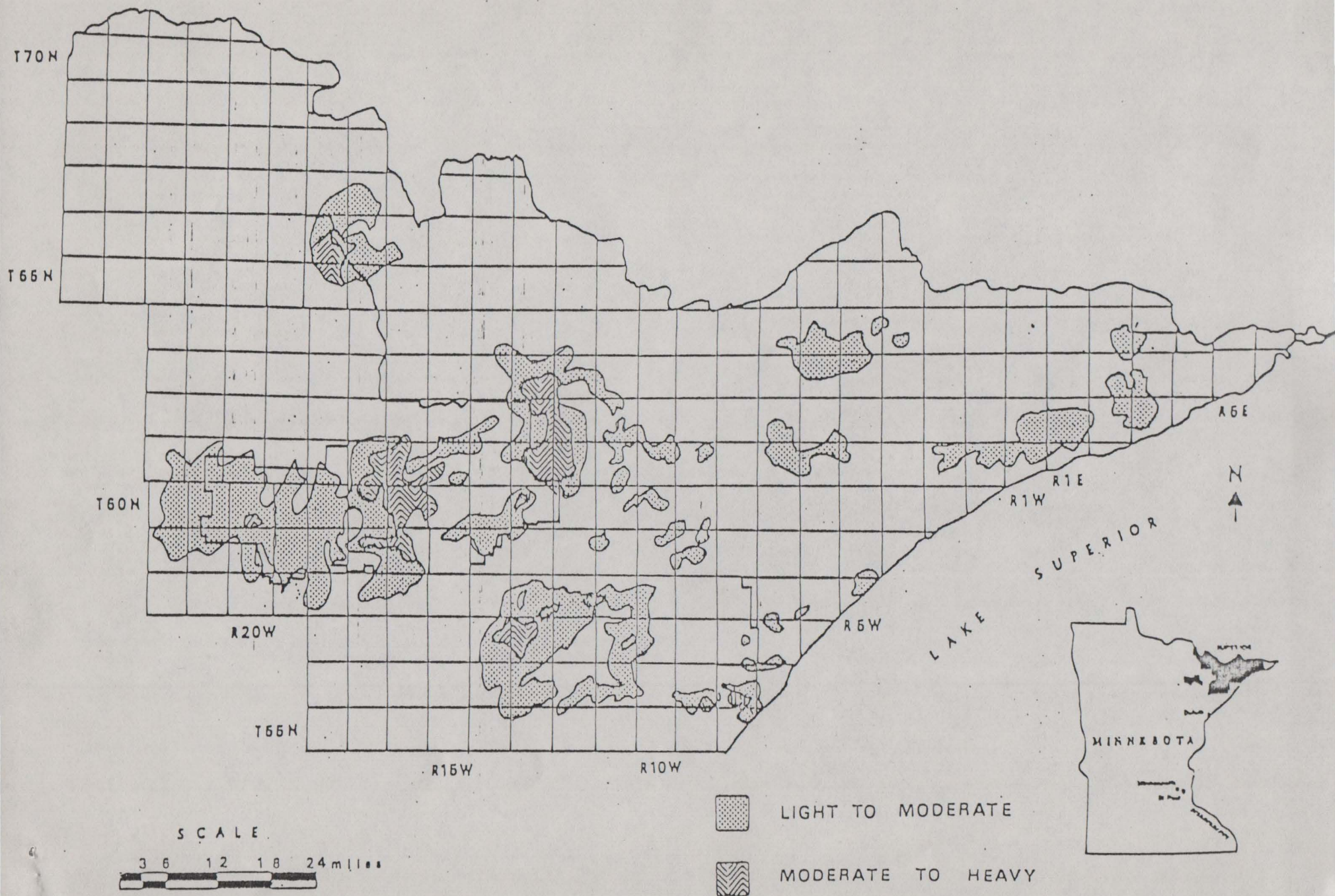
We plan on conducting a forest tent caterpillar egg mass survey in November in cooperation with the State of Minnesota. Approximately 100 areas will be sampled, so it should give us a good idea of the trend for next year. We are not planning on conducting a defoliation survey for the forest tent caterpillar in 1978.



JAMES B. HANSON  
Field Representative  
Forest Insect & Disease Management

Enclosures

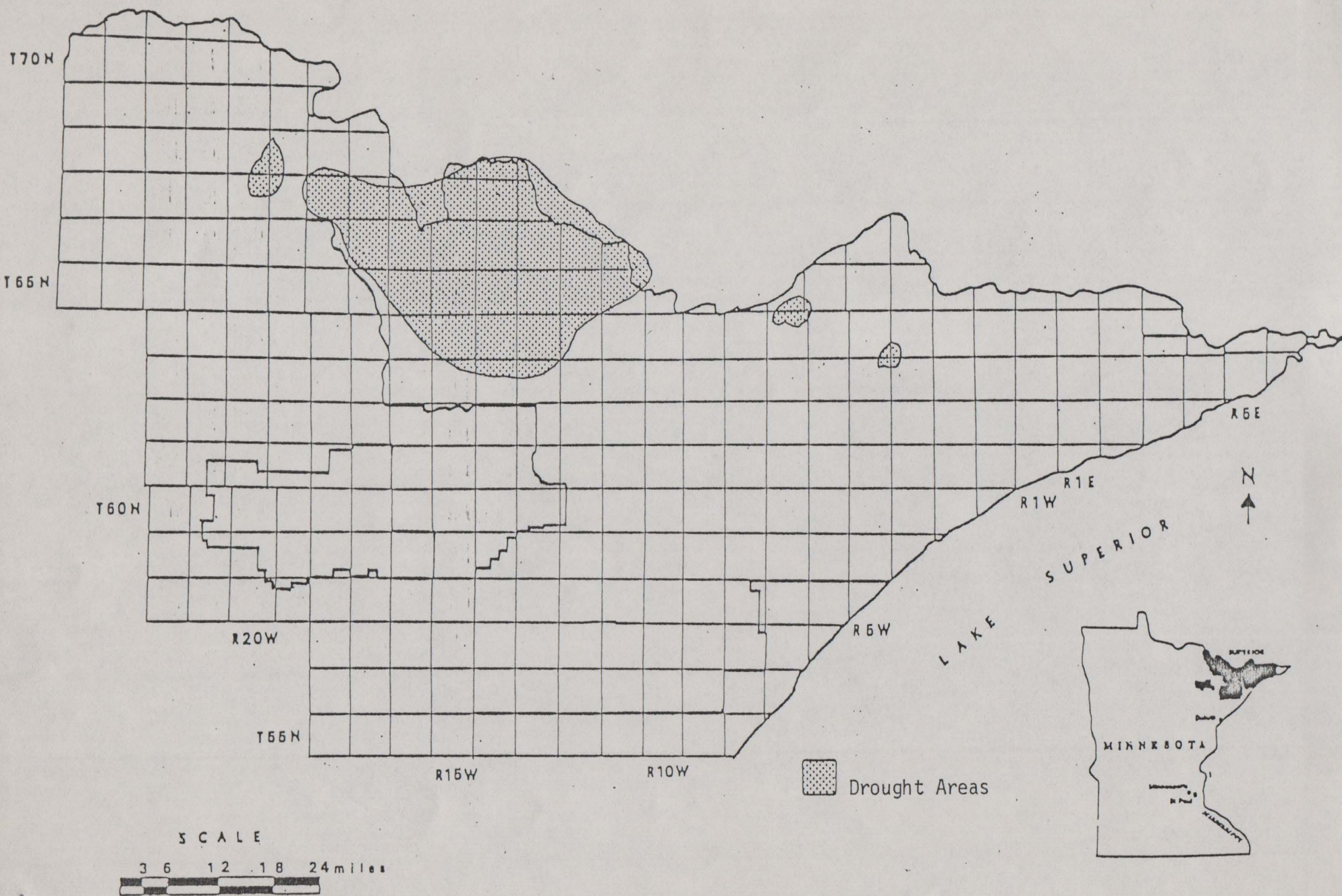




(Fig. 1)

SUPERIOR NATIONAL FOREST  
Forest Tent Caterpillar Defoliation 1977





(Fig. 2) SUPERIOR NATIONAL FOREST  
Drought Affected Areas, 1977